

## 5. Safe Driving Tips

No driver manual can completely teach you how to operate a vehicle or be a safe driver. Driving requires skill you can only gain through instruction and practice.

### Basic Driving

#### Starting

Check the vehicle owner's manual for the best starting procedures for the vehicle. The procedures vary depending on whether the vehicle has fuel injection, and the type of transmission. Make sure the parking brake is on before you start the vehicle.

If the vehicle has a manual transmission it must not be in gear, and, in some vehicles, you must depress the clutch. For a vehicle that has an automatic transmission, you must put the shift selector in "park." Otherwise, the vehicle will not start. You must press on the brake in some newer vehicles in order to select a gear.

#### Accelerating

Accelerate gradually and smoothly. Trying to start too fast can cause the drive wheels to spin, particularly on slippery surfaces, and cause the vehicle to slide. With a manual-shift vehicle, practice using the clutch and accelerator so the engine does not run too fast or stall when shifting between gears.

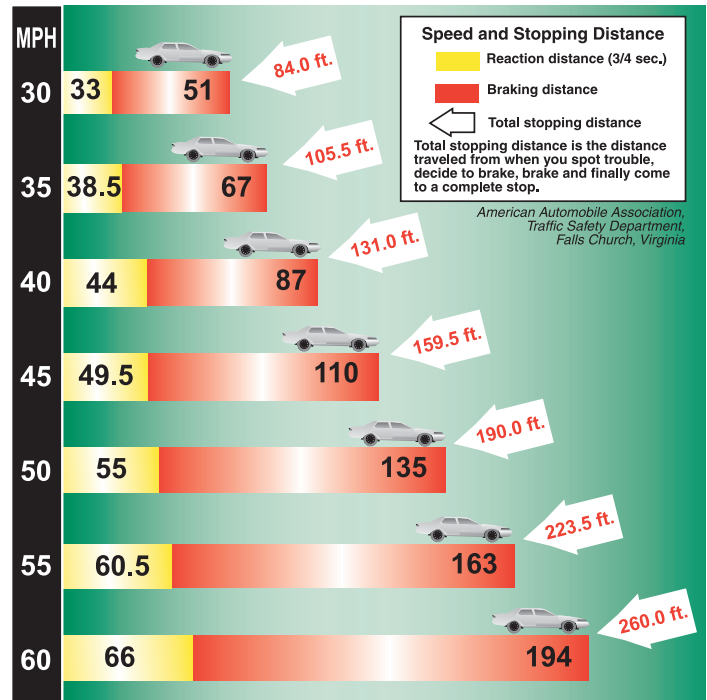
#### Braking and Stopping

Using your brakes to stop your vehicle is one of the most common driving techniques you must learn. The time it takes your wheels to stop depends on your vehicle's weight, size, height and load, and the size, condition and pressure of its tires. This distance is added to your reaction time. Your reaction time is the time it takes you to see the need to stop and get your foot on the brake pedal.

Even if your car and your reflexes are in top condition, the road surfaces still affect how fast you stop. Different road surfaces have different contact with your tires. Some surfaces are loose and allow your vehicle to skid easily. Even on dry pavement your car will skid if the brakes are applied too hard.

Try to avoid panic stops by watching for things well ahead of you. By slowing down or changing lanes, you may not have to stop at all. If you do have to stop, it can be a more gradual and safer stop.

As the condition of the road surfaces changes, you should change your following distance to make sure you have time to stop. The following table shows how far you will go before your car comes to a stop when driving at various speeds. Remember, these are distances figured under ideal conditions. Bad weather, road conditions, condition of your tires or slower reflexes can increase these distances.



#### Required Stops

You must always stop:

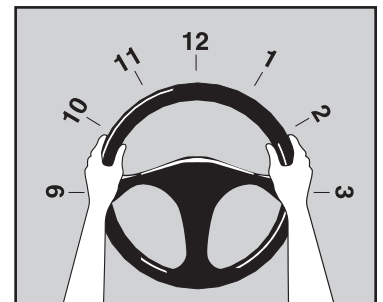
- at railroad crossings if your vehicle is carrying hazardous materials;
- when entering a public road from a private drive;
- at all stop signs;
- before crossing a sidewalk;
- at the request of any law officer;
- at a flashing red light, then go ahead if it is clear;
- at all red traffic lights, including where right turns on red are allowed;
- when a blind person with a white cane or red-tipped cane is walking in front of you or close enough to you that the person could be in danger; and
- when a blind person with a guide dog in a harness walks in front of you or close enough to you that the person or guide dog is in danger.

See page 32 regarding stops at railroad crossings and page 35 for stops when approaching school buses displaying flashing lights and/or stop arms.

#### Steering

Use a proper grip. Your hands should be placed on opposite sides of the steering wheel (see illustration) in a comfortable position.

Look well down the road, not just at the road immediately in front of your vehicle. Look for traffic situations where you will need to steer before you get to them. This way, you have time to steer smoothly and safely.



When turning corners, turn the steering wheel using the “hand-over-hand” or the “push-pull” technique. Do not turn the wheel with just the palm of one hand; you could lose control. When you complete a turn, straighten out the steering wheel by hand. Letting it slip through your fingers could be dangerous.

Drivers of vehicles equipped with airbags should be aware that arms positioned over the center of the steering wheel could be forced backward into the face if the airbag deploys during a collision.

## Proper Turning Techniques

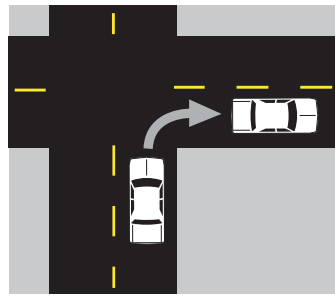
Plan your turns ahead of time. Decide where you want to be when you finish the turn. Give yourself a chance to slow down and watch out for both pedestrian and other vehicle traffic. Do not make sharp turns at the last minute; they are dangerous.

Make sure you signal properly and turn from the proper lane into the proper lane. Do not cut corners. Do not swing wide on your turns. These actions increase your chances of being in an accident. Generally, other drivers expect you to keep doing what you are doing. You must warn them when you are going to change direction or slow down. This will give them time to react, if needed, or at least not to be surprised by what you do.

## Turn Signals

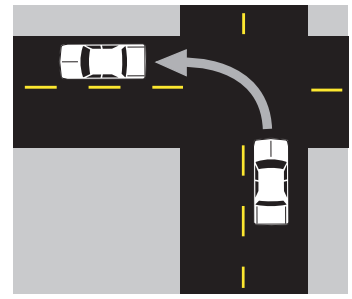
Turn signals give other drivers time to react to your moves. You should use your turn signals before you change lanes, turn right or left, merge into traffic, or park.

- Get into the habit of signaling every time you change direction. Signal even when you do not see anyone else around. It is easy to miss someone who needs to know what you are doing.
- Signal as early as you can. Try and signal at least three seconds before you make your move. You must signal at least 100 feet before a turn if the speed limit is 45 mph or less. If the speed limit is faster than 45 mph, you must signal at least 300 feet before you turn.
- Be careful that you do not signal too early. If there are streets, driveways or entrances between you and where you want to turn, wait until you have passed them to signal.
- If another vehicle is about to enter the street between you and where you plan to turn, wait until you have passed it to signal your turn. If you signal earlier, the other driver may think you plan to turn where that driver is and he/she might pull into your path.
- After you have made a turn or lane change, make sure your turn signal is off. After short turns, the signals may not turn off by themselves. Turn it off if it has not canceled by itself. If you do not, other drivers might think you plan to turn again.



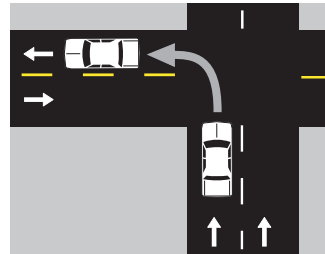
### Right Turn

*After checking to the rear and signaling, move to within four feet of the right curb. Begin turning to the right as soon as your front wheels are even with the bend of the curb around the corner. Turning the steering wheel hand-over-hand, move the car around the corner and into the lane next to the curb. Straighten out the wheels as you get around the corner.*

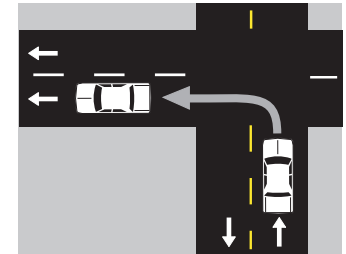


### Left Turn

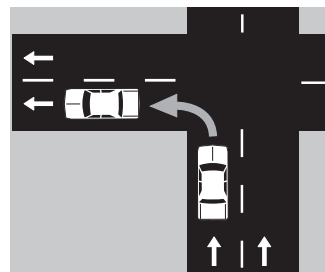
*Check traffic in your mirrors and use your turn signals. Move into the lane closest to the center line. When you are turning left onto a two-way street, start your turn just before the front of the car reaches the center of the intersection. Do not cut the corner. Steering hand-over-hand, turn the corner and finish in the first lane right of the center line.*



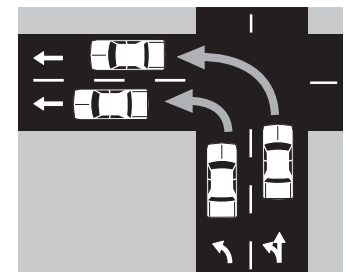
**One-way to two-way street**



**Two-way to one-way street**



**One-way to one-way street**



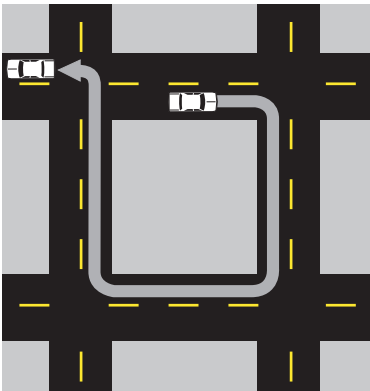
**One-way to one-way street with more than one turning lane**

## Turns on Red

You may make a right turn at a red light unless there is a “NO TURN ON RED” sign. Before you turn, you must come to a complete stop and yield to all other vehicle and pedestrian traffic.

You may also make a left turn at a red light if you are turning from the left lane of a one-way street onto another one-way street.

At some stop lights, turns are allowed only on green arrows.

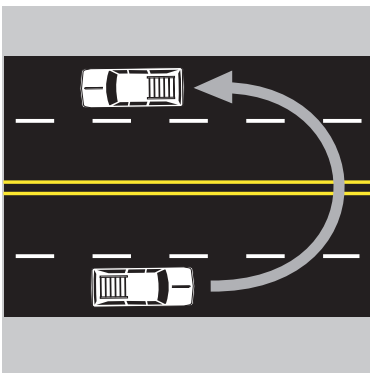


**Turnabout**

## Turnabouts

There are times when you will find yourself headed in the wrong direction. The safest way to change direction is to go around the block. The best way is to turn right and then circle around the block. This avoids most left turns across traffic. If at all possible, avoid backing into traffic from alleys or driveways.

If you are on the interstate system, go to the next exit and turn around. It is illegal to cross the median strip or to use the crossover areas reserved for emergency vehicles.



**U-turn**

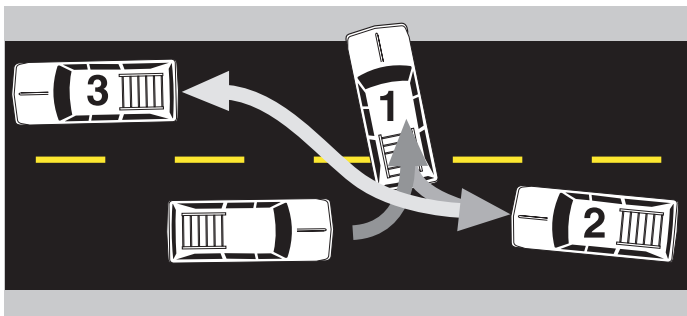
## U-Turns

These turns require wide streets or cars that can turn in a very small area. U-turns are not legal in all places, so watch out for signs that forbid them. If you must make a U-turn, move as far to the right as you can. Wait for a big gap in the traffic in both directions. Then turn left quickly, ending up in the opposite lane, and adjust your speed to match the traffic flow.

## Three-Point Turns

This is the most difficult and dangerous way to turn around. Use it only when the road or street is too narrow to make a U-turn and you cannot go around the block.

Move to the far right edge and signal a left turn. Wait until traffic is clear in both directions. When your spot is open, turn left, stopping just before your front wheels go off the pavement. Turn your steering wheel sharply to the right and back up if traffic is clear. Then start moving forward while pulling into the proper lane.



**Three-point turn**

## Signal When You Slow Down

Your brake lights let people know that you are slowing down. Always slow down as early as it is safe to do so. If you are going to stop or slow down at a place where another driver does not expect it, tap your brake pedal three or four times quickly to let those behind you know you are about to slow down.

## Hand Signals

Hand signals are extra precautions.



**Stop**



**Left Turn**



**Right Turn**

## Appropriate Speed

The speed you can drive your vehicle depends on the posted speed limit, the road conditions and the weather. The faster your vehicle is going, the more distance it will take to turn, slow or stop. For example, stopping at 60 mph does not take twice the distance it takes at 30 mph as one might think, but over three times the distance. The posted speed limit is the **FASTEST** speed you can legally drive **under ideal driving conditions**. The following general limits have been set:

- 20 mph in any business district;
- 25 mph in a residential district or school district;
- 45 mph in any suburban district, or for any vehicle pulling another vehicle unless it was designed for that purpose;
- 50 mph on unsurfaced secondary roads from sunset until sunrise, and for all trucks on secondary roads at any time of day;
- 55 mph on all primary roads, urban interstate highways and secondary roads, including unpaved roads from sunrise to sunset; and
- 70 mph on rural interstate highways.

**A lower limit may be set for any conditions listed above.**



Driving too fast is a major cause of traffic accidents. Driving too slow is also an important cause of traffic accidents. Try to drive with the general traffic flow on any road.

On the interstate system there is a minimum speed of 40 mph. Vehicles that cannot go at least that fast under normal conditions are not allowed on the interstate.

## Closed Cars on a Hot Day

Leaving children in an enclosed car on a hot day can be deadly. In as little as 10 minutes the temperature inside a car can reach well above 120 degrees depending on the temperature outside, the humidity, and how far windows are rolled down. Heat exhaustion can occur at temperatures above 90 degrees. When a child is enclosed in a hot car, body fluids and salts are lost through sweating, causing heat exhaustion.

If not treated immediately, heat exhaustion can lead to heat stroke. In heat stroke, a child can no longer sweat. The body temperature rises to deadly levels, leading to severe damage to the brain, liver and kidneys, or even death. Heat stroke is a medical emergency. Call 911 immediately. Steps should be taken to cool the patient down as soon as possible.

***NEVER leave children, elderly persons, dependent persons or pets in an enclosed car alone.***

## Bad Weather Driving

There are various road conditions where to be safe you must slow down. You must slow down before a curve, when the roadway is slippery, and when there is standing water on the road.

The only contact your vehicle has with the road is its tires. How good a grip the tires have with the road depends on the type and condition of the tires, and the type and condition of the road surface.

Many drivers do not pay enough attention to the condition of their tires or to the condition of the roadway. It is important that the tires be in good condition and have enough air in them. See the vehicle owner's manual for correct tire pressure.

You do not have as much traction on gravel and dirt roads as you do on concrete and asphalt roads. When driving on gravel or dirt, you must slow down. It will take you much longer to stop, and it is much easier to skid when turning.

## Curves

A vehicle can travel much faster in a straight line than it can in a curve. It is easy to go too fast in a curve. If you go too fast, then the tires will not be able to grip the road and the vehicle will skid. Always slow down before you enter the curve so you do not have to brake in the curve. Braking in a curve can cause the vehicle to skid.

## Slippery Roads

Slow down at the first sign of rain, snow or sleet. These all make the roadway slippery.

## Rain

Rain cuts the distance you can see. Having good wiper blades is important to safe driving and good car maintenance. Check them regularly.

Water and oil do not mix. During the first few minutes of a rain storm, the oil on the surface of the roadway forms a slick film on the rainwater. At this time your car is riding on a thin film of oil and water, and is ready to "ski." You should be most careful when turning and stopping during the first half hour of rain.

Higher speeds make driving in rain even more dangerous. As you go faster, your tires start to ride up on the surface of water on the road. This is called hydroplaning. The chances of hydroplaning get more and more dangerous between 35 and 55 mph. The results are reduced traction, not much braking ability, and little steering ability -- perfect conditions for your car to skid.



Usually these skids are short. To recover, keep your wheels turned in the direction you are skidding. Preventing hydroplaning is better than trying to control it. Check your tires on a regular basis for proper inflation and tread wear.

## Ice and Snow



Iowa winters always bring ice and snow. You must be prepared to deal with these weather forces.

For traction in snow and ice, snow tires or chains are advisable. Extra weight in your trunk may give you added traction if you have a rear-wheel drive vehicle. Studded snow tires can be used on motor vehicles from November 1 to April 1.

**NOTE:** Studded snow tires can increase stopping distances on dry roads.

Radial tires and non-radial tires do not mix. The risk of a skid is greater if you have radials on the front and non-radial snow tires on the back. If your front tires are radials, your snow tires should also be radials.

Starting and stopping on ice or snow can be very tricky. When trying to stop, do not slam on the brakes or the wheels will lock and you may be thrown into a dangerous skid. Use brakes and accelerator gently. If you do begin to skid, take your foot off the accelerator, and turn your steering wheel in the direction of the skid.

However, if you have antilock brakes, the motto is “stomp and steer.” This means that you should apply brakes firmly and steer straight ahead. The antilock brake system will adjust the braking to avoid skidding. If you have time, tap your brakes lightly several times to alert other drivers, then brake firmly.

*It is recommended you do not use cruise control if icy conditions exist.*

When starting out on the road, use the gas pedal carefully or you may put yourself into a skid, or spin your wheels and get yourself stuck in the snow. If you do get stuck, keep the wheels pointed straight and rock the car back and forth. You will have the greatest traction just before the wheels spin.

As winter temperatures go up and down, water freezes and melts. This makes hidden ice problems worse. Wet ice at the freezing point (32 F) is twice as slippery as hard, frozen ice.

Hidden ice patches on bridges and other open areas make it easy to slide off the road -- especially on curves. Turn slowly to avoid spinning or sliding. Creep along if you have to. If you do skid, take your foot off the gas but do not brake. Steer in the direction the back end of the car is moving.

When the weather warms up a bit, be very careful on bridges. The road on both sides of the bridge may be ice-free. However, cold air blowing under the bridge quickly freezes water, making icy patches a real problem.

If you become stranded in a blizzard and no help seems available, keep the following points in mind:

- It is easy to get lost in the snow. Leave the car **ONLY IF YOU ARE POSITIVE YOU CAN REACH SAFETY**. Many people have died of exposure because they became disoriented in the swirling snow and lost their way even though they had only a short distance to go.
- Stay in the car. Wrap yourself in blankets, floor mats, newspapers or anything that is available. If other people are in the car, sit or huddle together to take advantage of body heat. Cover up with whatever is available.
- Fast idle the engine to run the heater, but do not keep the engine running all the time. Try to run the engine and heater only 10 minutes or so every hour.
- Move slowly and avoid overexertion.
- Keep fresh air circulating in the car. Carbon monoxide can build up from running the engine if the vehicle is sealed by blowing and drifting snow or freezing rain. Open only the downwind window for ventilation.
- If you have a brightly-colored object, tie it to your antenna or some other high point on the car to make you more visible. Turn on the car's dome light; it will make you easier to see.
- Keep active. From time to time, flap your arms up and down and stomp your feet. It will help stimulate circulation to your arms and legs. It will also help relieve tense muscles and help you stay awake.
- Do not let all the people in the car go to sleep at the same time.

Carry a small winter car safety kit in case you get stuck. It should include the following emergency items:

- a snow shovel or hoe;
- an ice scraper and a brush;
- sand, gravel, cat litter or something to help give your wheels traction if you are stuck;
- blankets or sleeping bags, in case you are stranded;
- candles and matches (They can be used as a light source and to melt snow for drinking water if you are stranded. Be sure you have adequate ventilation when burning any candles. If your car is buried in the snow and the windows are blocked, the candle may use the available oxygen you need for breathing.);
- a selection of empty coffee cans for melting snow and for a portable toilet;
- tissue paper;
- extra hats, gloves, scarves and socks; and
- jumper cables and a tow chain.

## Space to Cross or Enter

When you cross traffic, you need a large enough gap to get all the way across the road. When you enter traffic, you need enough space to first turn and then to get up to speed.

- If you want to cross several lanes of traffic going the same way you are, take them one at a time. Like going up or down stairs one step at a time, it is safest and easiest to merge from one lane to another one lane at a time. It is very difficult to determine if all the lanes are free and safe to cross. If you were to wait until all the lanes were clear, you could tie up traffic, or even cause an accident.
- When you cross traffic, you need room to get all the way across. Stopping halfway across is only safe when there is a median divider large enough to hold your car. Do not stop in a divider where part of your vehicle is sticking out into traffic.
- If you are turning left, make sure your path will be clear of both pedestrians and vehicles. You do not want to be caught waiting for a path to clear while being stuck across a lane that has an oncoming vehicle bearing down on you.
- Never assume another driver will share space with you or give you space. Beware of the “false” signal. Do not turn just because an approaching vehicle has a turn signal on. The driver may plan to turn beyond you, or has forgotten to turn the signal off from a prior turn. This is particularly true of motorcycles; their signals often do not cancel by themselves. Wait until the other driver actually starts to turn and then proceed if it is safe to do so.

## Passing

Whenever signs or road markings permit you to pass, you will have to judge whether you have enough room to pass safely. Do not count on having enough time to pass several cars at once. Be safe! As a general rule, only pass one vehicle at a time. Good judgment and a clear road ahead are needed to safely pass another vehicle.

- **Oncoming Vehicles.** At a speed of 55 mph, you need about 10 seconds to pass. That means you need a 10-second gap in oncoming traffic and enough sight distance to pass. You must judge whether you have enough space to pass safely.

At 55 mph you will travel over 800 feet in 10 seconds. So will an oncoming vehicle. That means you need over 1,600 feet, or about one-third of a mile, to pass safely.

It is hard to judge the speed of oncoming vehicles at this distance. They do not seem to be coming as fast as they really are. A vehicle that is far enough away generally appears to be standing still. In fact, if you can really see it coming closer, it may be too close for you to pass. If you are not sure, wait to pass until you are sure there is enough space.

- **Hills and Curves.** You have to be able to see at least one-third of a mile, or about 10 seconds, ahead. Any time your view is blocked by a curve or a hill, you should assume that there is an oncoming vehicle just out of sight. Therefore you should treat a curve or a

hill as you do an oncoming vehicle. This means you should not start to pass if you are within one-third of a mile of a hill or curve.

- **Intersections.** It is dangerous to pass where a vehicle is likely to enter or cross the road. Such places include intersections, railroad crossings and shopping center entrances. While you are passing, your view of people, vehicles or a train can be blocked by the vehicle you are passing. Also, drivers turning right into the approaching lane will not expect to find you approaching in their lane. They may not even look your way before turning.
- **Lane Restrictions.** Before you pass, look ahead for road conditions and traffic that may cause other vehicles to move into your lane. You might lose your space for passing because of:
  - people or bicyclists near the road;
  - a narrow bridge or other situation that causes reduced lane width; or
  - a patch of ice, pot hole, or something on the road.
- **Space to Return.** Do not pass unless you have enough space to return to the driving lane. Do not count upon other drivers to make room for you.

### Passing Procedure (Multi-lane Highways)

1. If the road has two or more lanes in the same direction, you should not have to face oncoming traffic.
2. Check for traffic behind you, especially in your blind spots. Signal your left turn. Move into the left lane.
3. Accelerate and move around the vehicle in front of you. Move back to the right only when you can see the passed vehicle's headlights in your rearview mirror. This ensures you have enough room to safely pull back in front of the vehicle you passed.

### Passing Procedure (Two-Lane Highways)

1. Check traffic ahead and behind, including your blind spot. Move slightly left to see if there is any oncoming traffic. REMEMBER, YOU NEED AS MUCH AS 1,600 OR MORE FEET TO GET AROUND A VEHICLE AND BACK INTO THE RIGHT LANE.

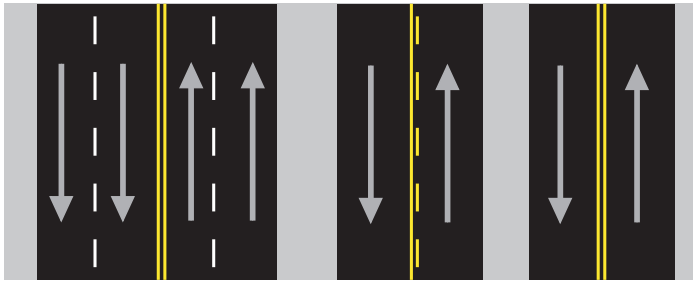
**BE READY TO PULL BACK INTO YOUR OWN LANE WITHOUT PASSING IF THERE IS ONCOMING TRAFFIC.**

2. If the way ahead is clear, signal. Move left of center and accelerate around the vehicle you are passing. (In accelerating around the vehicle you are passing, you should not exceed the posted speed limit.) If you have to speed to pass, you probably do not need to pass. If you go over the speed limit while passing, you can be given a ticket.



- When you can see the headlights of the vehicle you just passed in your rearview mirror, signal a right turn, check your mirror again and pull back into the right lane.

## Lane Markings Tell a Passing Tale



**Lane Lines:** No passing either way over center yellow lines.

**Solid and Broken Yellow:** Do not pass when solid line is in your lane.

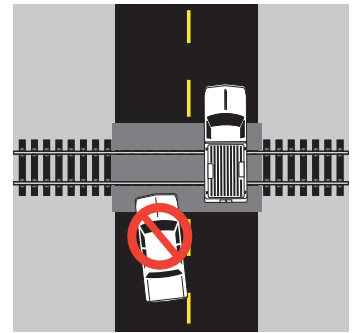
**Double Yellow Center Line:** No passing in either lane.

## Do not pass when:

- you are coming to the top of a hill;
- you are going around a curve when your view along the highway is obstructed;
- you are within 100 feet of a narrow bridge, viaduct, or tunnel that has a sign posted to let you know it is there;
- you are within 100 feet of an intersection or railroad crossing;
- you must go off the pavement or onto the shoulder of the road while passing;
- there is a stopped school bus in your lane or the oncoming lane, or a school bus when its red or amber warning signal lights are flashing or has its stop arm out;
- oncoming traffic is so close it would be dangerous to try to make it around the vehicle you are passing.



**Bridge/tunnel**



**Railroad**



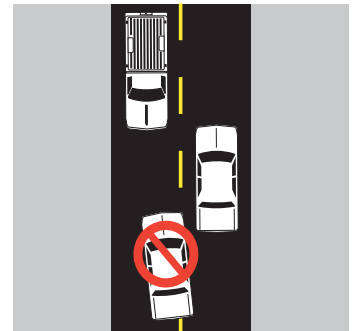
**Intersection**



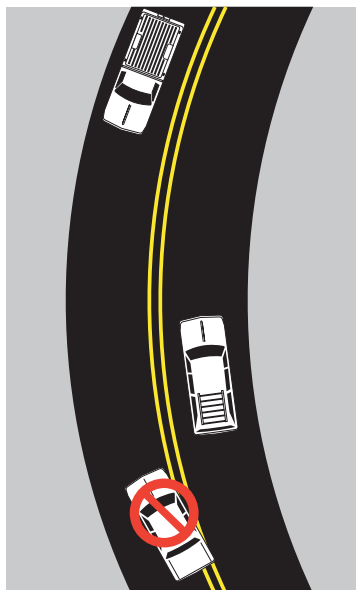
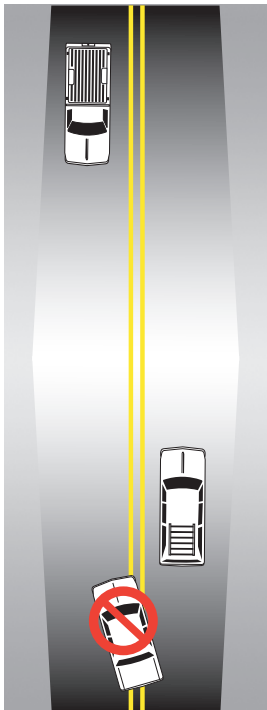
**Onto shoulder of road**



**Stopped school bus or a school bus when red or amber warning signal lights are flashing or has its stop arm out**



**Vehicle approaching**



**Do not pass on a hill (left), or on a curve (above).**

## Defensive Driving Scanning

To be a good driver, you must know what is happening around your vehicle. You must look ahead, to the sides, and behind the vehicle. Scanning helps you to see problems ahead, vehicles and people that may be in the road by the time you reach them, signs warning of problems ahead, and signs giving you directions.

Searching and scanning critical areas should be done in a regular sequence. A visual search pattern, such as in the guidelines described below, helps you adjust to any unusual events.

Whenever there is a lot of activity along the side of the road, there is a good chance that someone will cross or enter the road. Therefore, it is very important to look to the sides when you are near shopping centers and parking lots, road work areas, busy sidewalks, and playgrounds and schoolyards.

## Looking Ahead

In order to avoid last-minute braking or the need to turn, you should look down the road at least 10 seconds ahead of your vehicle. By looking well ahead and being ready to stop or change lanes if needed, you can drive more safely, save on fuel, help keep traffic moving at a steady pace, and allow yourself time to better see things around your vehicle and along the side of the road. Looking well down the road will also help you to steer straighter with less weaving.

In the city, 10 seconds is about one block. When you drive in city traffic, you should try to look at least one block ahead. On the highway, 10 seconds is about four city blocks or a quarter to one-third of a mile.



***Scan to the left and right. Watch for changing conditions and be prepared for the unexpected.***

How do you know how many seconds you are looking ahead? Here is how to figure if you are looking 10 seconds ahead.

- Find a non-moving object like a sign or telephone pole near the road about as far ahead as you are looking.
- Start counting one-one-thousand, two-one-thousand, three-one-thousand, etc., until you reach the object.
- The number of seconds you have counted is the number of seconds ahead that you were looking.

You can be a safer driver by looking well ahead. You can avoid the need to stop or turn quickly.

By looking well ahead, you can save on fuel. Every time you have to stop quickly, it takes time and fuel to get your car back up to speed. Traffic would flow more smoothly if everyone looked well ahead. Making driving changes before the last moment gives drivers behind you more time to react.

As your speed increases, it is most important to look farther ahead.

## Look to the Sides

Since other vehicles or pedestrians may cross or enter your path anytime, you should look to the sides to make sure no one is coming. This is especially true at intersections and railroad crossings.

## Intersections

Intersections are any place where traffic merges or crosses. They include: cross streets, side streets, driveways, and shopping center or parking lot entrances. Before you enter an intersection, look left, right and left again for approaching vehicles and/or crossing pedestrians. If stopped, look left, right and left again just before you start moving. Look across the intersection before you start to move to make sure the path is clear through the intersection.

## Railroad Crossings

As you approach any railroad crossing, look both ways on the tracks to make sure a train is not coming. Do not assume a train is not coming even if you have never seen one at that crossing before. That is one of the leading causes of fatalities at railroad crossings.

At crossings with more than one track, wait until the passing train is well down the track before starting to cross. Another train that might have been hidden by the one that just passed could be coming.

## Look Behind

Besides watching traffic ahead of you, you must check traffic behind you. You need to check your mirrors more often when traffic is heavy. This is the only way you will know if someone is following too closely or coming up too fast and will give you time to do something about it. It is very important to look in your mirrors for vehicles when you change lanes, slow down, back up, or are driving down a long or steep hill.

## Avoiding/Minimizing Accidents

When it looks like a collision may happen, many drivers panic and fail to act. In some cases they do act, but do something that does not help to reduce the chance of the collision. There almost always is something you can do to avoid the accident, or reduce the results of the accident. In avoiding a collision, drivers have three options: (1) stop, (2) turn, and (3) speed up.

## Speeding Up

Sometimes it is best or necessary to speed up to avoid a collision. This may happen when another vehicle is about to hit you from the side or from behind and there is room to the front of you to get out of danger. Be sure to slow down once the danger has passed.

## Protect Yourself in Collisions

You may not always be able to avoid a collision. The most important thing you can do is to use your lap and shoulder belts. Other than your seat belts, there are a couple of other things that could help prevent more serious injuries.



## Hit From the Rear

If your vehicle is hit from the rear, your body will be thrown back towards the rear of your vehicle. Press yourself against the back of your seat and put your head against the head restraint. Be ready to apply your brakes so that you will not be pushed into another vehicle.

## Hit From the Side

If your vehicle is hit from the side, your body will be thrown towards the side that is hit. Front air bags will not help in this situation. Your lap and shoulder belts are needed to help keep you behind the wheel. Get ready to steer or brake to prevent your vehicle from hitting something else.

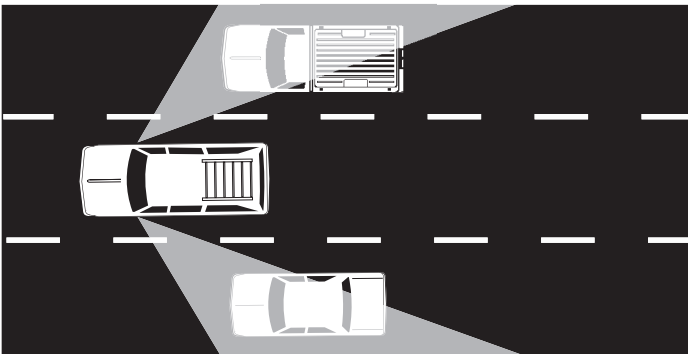
## Hit From the Front

If your vehicle is about to be hit from the front, it is important to try and have a “glancing blow” rather than being struck head on. This means that if a collision is going to happen, try and turn the vehicle. At worst, you hit with a glancing blow, and you might miss it. If your vehicle has an air bag, it will inflate. It also will deflate following the accident, so be ready to keep your vehicle from hitting something else. You must use your lap and shoulder belts to keep you behind the wheel, and to protect you if your vehicle has a second collision.

## Changing Lanes

Whenever you want to change lanes, you must check that there are no vehicles in the lane you want to enter. You must yield to vehicles in that lane. This means you must check for traffic to the side and behind your vehicle before you change lanes. Changing lanes includes: changing from one lane to another, merging onto a roadway from an entrance ramp, and entering the roadway from the curb or shoulder. When changing lanes, you should do the things listed here.

- Look in your rearview and side mirrors. Make sure there are no vehicles in the lane you want to enter. Make sure that nobody is about to pass you.
- Look over your shoulder in the direction you plan to move. Be sure no one is near the rear corners of your vehicle. These areas are called “blind spots” because you cannot see them through your mirrors.



Before you move your vehicle to the left or right, turn your head and check these areas. When you turn your head to check the blind spots, make sure you keep the steering wheel straight; people have a natural tendency to turn their arms in the same direction as their head turns. Looking to the left may make you veer the car that direction if you are not careful. You may sideswipe someone else if you do not check your blind spots when changing lanes.

- Check quickly. Do not take your eyes off the road ahead for more than an instant. Traffic ahead of you could stop suddenly while you are checking traffic to the sides, rear or over your shoulder. Also, use your mirrors to check traffic while you are preparing to change lanes, merge, or pull onto the roadway. This way you can keep an eye on cars ahead of you at the same time. Look several times if you need to. You must keep track of what traffic is doing in front of you and in the lane you are entering.
- Check the far lane. Be sure to check the far lane, if there is one, as someone in that lane may be planning to move into the same lane you want to enter.
- Check for other road users. Remember there are other road users such as motorcycles, bicycles, and pedestrians that are harder to see than cars and trucks. Be especially alert when you are entering the roadway from the curb or driveway.
- Inform other drivers of your plans by proper signaling. When you do make your lane change, do it carefully but without slowing down unless you are moving into a slower lane of traffic. While you are changing lanes, constantly check traffic so you will see anyone coming up on you unexpectedly.

## Backing

It is hard for you to see behind your vehicle. Try to do as little backing as possible. Where backing is necessary, here are some hints that will help you back your vehicle safely.

- Check behind your vehicle before you get in. Children or small objects cannot be seen from the driver's seat.
- Place your right arm on the back of the seat and turn around so that you can look directly through the rear window. Do not depend on your rearview or side mirrors since you cannot see directly behind your vehicle.
- Turn the steering wheel the direction you want the rear of the vehicle to go.
- Back slowly, your vehicle is much harder to steer while you are backing.
- Whenever possible, use a person outside the vehicle to help you back.



## Night Driving

It is much harder to see at night. Here are some things you can do that will help you see better.

Night driving creates its own special problems. Headlight glare masks the position and number of oncoming vehicles.

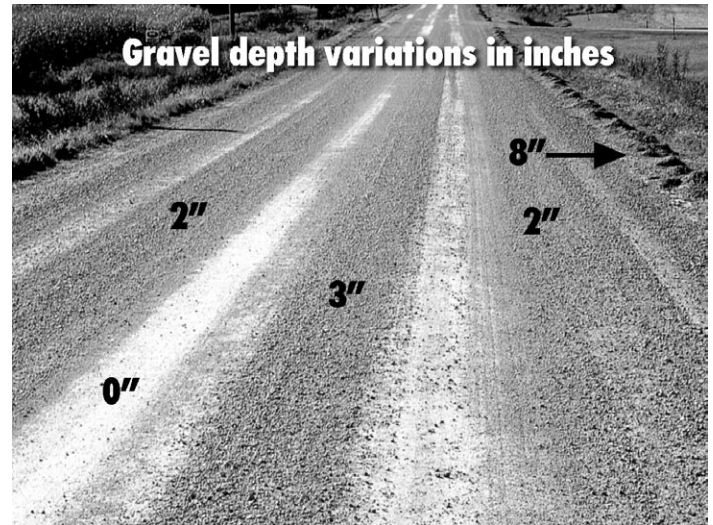


You can only see what your headlights light up. That is why it is important to keep your headlights clean and in good condition. You should drive a little slower at night because it is easy to “over drive” your headlights. That means the distance you can see is shorter than the distance in which you can stop. You may not be able to stop by the time you recognize a hazardous situation.

- Iowa law requires you to use your headlights from sunset to sunrise or whenever visibility is 500 feet or less.
- You must switch to low-beam headlights within 1,000 feet of an oncoming vehicle.
- You must also use your low-beam headlights when you are within 400 feet of the car you are following.
- If you meet an inconsiderate driver who does not dim his or her vehicle's bright lights, try to watch the center line and slow down slightly. The bright light may make you feel somewhat blinded, but the feeling disappears in a few seconds. As you get older, it takes longer and longer to recover from such lights.
- Windshields, headlight covers and mirrors that are dirty all reduce your overall night driving safety. Keep them clean and you will be safer.

## Rural Road Driving

Some road conditions and driving hazards are unique to rural roads when compared to a paved interstate or city street. Rural roads consist of paved, gravel and dirt roads. It is important to realize the characteristics of different types of rural roads.



### Gravel

Stopping or turning on loose gravel is more difficult compared to pavement because tire traction is reduced. Skidding can occur as traction is lost. A “washboard” effect can occur on gravel roads. This is a series of potholes that can affect steering and vehicle control. When driving on gravel, you must slow down. It will take you much longer to stop and it is much easier to skid when turning.



### Dust

During dry periods of the year, gravel roads can become extremely dusty. Vision can be reduced. It is recommended that drivers use low beam headlights to make the vehicle more visible to others.



## Narrow bridges and roads

Gravel or dirt roads can be narrow and have little to no shoulder. Ditches can be very steep and dangerous. Drivers should look for narrow bridge signs and be prepared to stop for oncoming traffic.



## Steep hills and curves

Hills and curves on rural roads are often steeper and sharper than on highways. Before reaching the crest of a hill or before entering a curve, slow down, move to the right side of the road and watch for oncoming vehicles.

## Railroad crossings

Many railroad crossings on rural roads are marked only with a round yellow railroad crossing ahead warning sign and a white X-shaped railroad crossing crossbuck. Unlike most railroad crossings on major roads, there are typically no red flashing lights, warning bells, crossing gates or pavement markings at rural road railroad crossings. Always slow down, look both ways and be prepared to stop for a train before crossing the tracks.



## Uncontrolled intersections

Some intersections on rural roads are not controlled by yield or stop signs. These intersections can be very dangerous if drivers don't approach them with caution. When approaching an uncontrolled rural intersection slow down and be prepared to stop for oncoming traffic.

## Blind spots

Intersections, hills and curves become even more dangerous when there are objects such as trees, cornfields or buildings blocking the driver's view of oncoming traffic.

## Large and/or slow moving vehicles

It is common to encounter slow moving and large vehicles such as farm equipment, animal drawn vehicles and road maintenance equipment on rural roads. It is important to identify these vehicles early and slow down when meeting them or coming up behind them. Slow moving equipment may make wide turns, either left or right at unmarked entrances. Some farm equipment is wider than the road itself. Make sure the driver of the slow moving vehicle can see your vehicle before passing. Always use extreme caution when passing.

## Wildlife

While animals can be present on any roadway, drivers often encounter more animals on rural roads as these roads extend through wildlife habitats and close to farms with livestock. Be aware and look for animals while driving on rural roads, especially at sunrise and sunset.

Deer are by far the highest cause of animal related automobile crashes. October and November are the peak months for deer accidents. If an animal is spotted, slow down and be prepared to stop. If there isn't time to stop or avoid the animal, don't swerve sharply. The driver's chance of getting seriously hurt are decreased if he/she hits the animal and avoids swerving into oncoming traffic or rolling the vehicle over in the ditch. Deer travel in groups, so always look for more animals if one is seen.

## Communicating - Headlights, Horn and Emergency Signals

Some drivers do not always pay attention to what is going on around them. Accidents often happen because one driver does not see another driver, or when one driver does something the other driver does not expect. It is important that drivers let other road users know they are there, and what they plan to do.

## Use Your Headlights

Besides helping you to see at night, headlights help other people see you. Remember to turn on your headlights whenever you have trouble seeing others. If you have trouble seeing them, they are having trouble seeing you.

- On rainy, snowy or foggy days, it is sometimes hard for other drivers to see your vehicle. In these conditions, headlights make your vehicle easier to see. Remember, if you turn on your wipers, turn on your headlights.
- Turn on your headlights when it begins to get dark. If you turn them on a little early, you will help other drivers see you.

- Whenever lights are necessary, use your headlights, not your parking lights. Parking lights are for parked cars only.
- When driving at dusk or dawn, turn on your headlights. Drivers coming toward you may have trouble seeing your vehicle. Your headlights will help them see you.

## Use Your Horn

People cannot see you unless they are looking your way. Your horn can get their attention. Use it whenever it will help prevent an accident. If there is no immediate danger, a light tap on the horn should be all you need. Use your horn when:

- a person on foot or on a bike appears to be moving into your lane of travel;
- you are passing a driver who starts to turn into your lane;
- there is a driver who is not paying attention or who may have trouble seeing you; or
- you are coming to a place where you cannot see what is ahead, such as exiting a narrow alley.

If there is danger, do not be afraid to sound a **SHARP BLAST** on your horn. Do this when:

- another car is in danger of hitting you; or
- you have lost control of your vehicle and are moving towards someone.

## When Not to Use Your Horn

There are several occasions when you should not use your horn. They include:

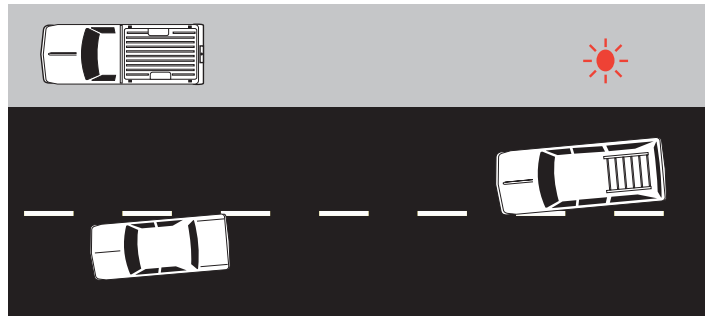
- to encourage someone to drive faster or get out of the way;
- to scold another driver for an error;
- to greet a friend; or
- around pedestrians who are blind.

## Emergency Signals

If your vehicle breaks down on a highway, make sure that other drivers can see it. All too often accidents occur because a driver did not see a stalled vehicle until it was too late to stop.

If available, use your two-way radio or telephone to notify authorities that you or someone else has broken down. Many roadways have signs that tell you the CB channel or telephone number to call in an emergency. Here are some guidelines if you are having vehicle trouble and have to stop.

- If at all possible, get your vehicle off the road away from traffic.
- Turn on your emergency flashers to show you are having trouble.
- If you cannot get your vehicle off the roadway, try to stop where other drivers have a clear view of your vehicle. Do not stop just over a hill or just around a curve.
- Try to warn other road users that your vehicle is there. Place emergency flares behind the vehicle. This allows other drivers to change lanes if necessary.



- If you are stalled on the roadway:
  - Have your passengers get out of the vehicle quickly and stand safely off the roadway. A rear-end collision could prove to be deadly.
  - If you do not have emergency flares or other warning devices, stand off the road, where you are safe from traffic, and wave traffic around your vehicle. Use a white cloth if you have one.
- Never stand in the roadway. Do not even try to change a tire if it means you have to be in a traffic lane.
- Lift the hood and tie a white cloth to the antenna, side mirror or door handle to signal an emergency.

## Blind Spots

Drive your vehicle where others can see you. Do not drive in another vehicle's blind spot.

- Try to avoid driving on either side and slightly to the rear of another vehicle. Either speed up or drop back so the other driver can see your vehicle more easily.
- When passing another vehicle, get through the other driver's blind spot as quickly as you can. The longer you stay there, the longer you are in danger of them turning into you.
- Never stay along side a large vehicle such as a truck or bus. These vehicles have large blind spots and it is hard for their drivers to see you.





- There may also be blind spots in front and to the side of you caused by parked vehicles, shrubbery, trees, pedestrians and other fixed objects. Be careful of them when pulling into cross traffic.
- The sun can also create blind spots with reflections off any of your window surfaces. The front windshield is the most common place for such reflections and blind spots. Sunglasses or use of the visors in most cars help shield your eyes from those reflections that make it hard to see. For tall drivers, the rearview mirror may cause a blind spot.



***Blind spots occur anywhere your vision is blocked. Two common causes of these problems are vehicle equipment (rearview mirrors, door post, etc.) and landscaping (trees, hedges, hills and walls).***

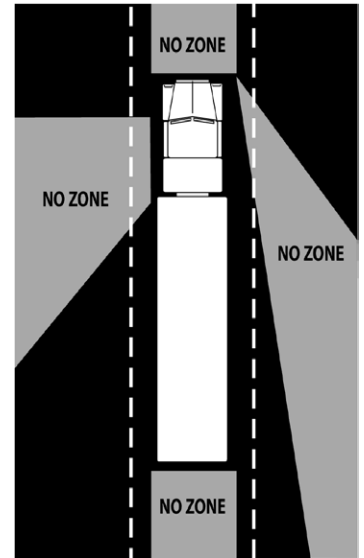
## Sharing the Road

You always must share the road with others. The more distance you keep between yourself and everyone else, the more time you have to react to them. This space is like a safety cushion. The more you have, the safer it can be. The following are examples where you may need to increase your space:

### Large Trucks

- A loaded truck with good tires and properly adjusted brakes, traveling at 55 mph on a clear, dry roadway, requires a minimum of 290 feet to come to a complete stop. It is essential therefore to not enter a roadway in front of a large vehicle. It is also important to avoid changing lanes in front of a large vehicle if you are turning off the roadway.
- A truck or bus has blind spots on each side where an automobile cannot be seen. These blind spots are referred to as the "No-Zone." No-Zone is a highway safety term that describes blind-spot areas on the side, front and rear of large trucks where passenger vehicles "disappear" from view and where

accidents are most likely to occur. Do not drive in the No-Zone, except when absolutely necessary. It is advisable to avoid driving alongside a large vehicle for prolonged periods under any circumstances. If truck drivers cannot see you, the possibility of a collision is greatly increased. When you stay in the No-Zone, you make it impossible for the driver to see you.



- When traveling up or down steep hills, large vehicles must drive slowly, approximately 35 mph, and therefore use the right lane. Avoid driving in the right lane when traveling up or down hills, as well as in the vicinity of truck weigh stations, where slow-moving trucks will be attempting to re-enter faster-moving traffic. By avoiding the right lane in these areas, you will reduce the possibility of rear-ending or being rear-ended by a large vehicle.
- On long, downhill slopes, there are sometimes special "escape" or "runaway" ramps for trucks. The ramps are used only by large vehicles that are out of control or cannot stop because of brake failure. Never stop or park near these ramps.
- Unlike the hydraulic brakes on automobiles, trucks and buses have air brakes. Air brakes do not operate instantly like hydraulic brakes. Air brakes' air lines are empty until the brake pedal is depressed, at which time the air lines fill with air. Only then will the brake on a large vehicle begin to operate. It is therefore imperative that drivers do not make sudden stops in front of large vehicles.
- Pay close attention to truck turn signals. Trucks make wide right turns and sometimes must leave an open space to the right just before the turn. To avoid an accident, do not pass a truck on the right if there is a possibility it might make a right turn.

## Motorcycles\*

- Make sure you see the motorcycle and know its speed before you start to turn or enter an intersection.
- Intersections are the most likely places for car/motorcycle collisions to occur.
- Respect the vehicle space of a motorcycle and its position in traffic.
- Turn signals do not automatically shut off on a motorcycle and riders occasionally forget to cancel them after a turn is completed. Make sure you know what the rider is going to do **BEFORE** you move into the motorcycle's path.
- When driving behind a motorcycle, allow at least a two-second following distance. This provides the cyclist enough room to maneuver or stop in an emergency. When the road is wet or slippery, stay further behind. With only two wheels in contact with the pavement, motorcycles may be very unstable when trying to stop quickly.
- When passing a motorcycle, allow a full lane for the motorcycle; never crowd into the same lane as the cycle.
- Watch for the unexpected and give motorcyclists their share of the road.

**\*Source: AAA Iowa.** For more information on motorcycle operation, a separate manual called "Iowa Motorcycle Operator Manual," is available from any driver's license station. It gives a more complete explanation of operating techniques for motorcycles and traffic laws that relate to motorcycles.

## Bicycles

Bicycle riders are common on Iowa's roads. You will meet them in cities and on country roads. Bicycles are a recognized form of transportation. **Under Iowa law, bicyclists and motorists must comply with the same rules of the road and be given the same rights. Sharing the road means sharing these rights and responsibilities.**

Just as motor vehicle operators have different levels of skill, you will find bicycle riders with varying levels of skills. When you approach bicycle riders, assess the bicyclists' capabilities. A skillful cyclist rides predictably and holds a steady line.

### Common signs of bicyclist inexperience may include:

- riding near the gutter;
- swerving unpredictably;
- ignoring traffic signs and signals; and
- riding without a light at night.

If you see these signs, be ready for any sudden movements by the bicyclist.

Give bicycle riders the room they deserve and need for safety. When passing a bicycle rider, pass as if the cyclist were a vehicle and move into the other lane. On multi-lane roads with wide outside lanes, allow at least three to four feet between your vehicle and the bicyclist for clearance. On narrow, two-way roads, wait for a break in traffic before passing.

Do not pass if oncoming traffic is near. After passing, cautiously return to your lane - a bicyclist could be in your blind spot. Do not honk your horn or flash your headlights at bicyclists. They may be startled and lose control. Bicycles often



travel nearer the right edge of a traffic lane. However, they may swerve to avoid road hazards such as potholes, glass debris, drainage grates, or a strong crosswind.

Failure to see bicycle riders can cause vehicle/bicycle crashes. Use extra caution during peak morning and afternoon traffic - the sun's glare may hide a bicyclist in your path. An experienced bicyclist on a multi-speed bike can maintain a speed of 15 to 25 miles per hour on level pavement.

When making a right turn near a bicycle rider, move to the far right before turning. If there is a bicycle lane, merge into it to prevent being overtaken by a cyclist. Do not race around a cyclist and make a right turn across his or her path. You may be setting up a collision if the cyclist cannot stop in time. Be sure to check the blind spot over your right shoulder before beginning to turn.

Some bicyclists may choose to ride on the street even though there is a bicycle path available nearby. If so, give the rider the needed space. Some studies have shown there are more bicycle collisions on bike paths than on the roadways.

Be careful when opening your vehicle door. Road widths can force bicyclists to ride close to parked vehicles where they may be injured by an opening door.

Give bicyclists the extra courtesy they need to negotiate railroad tracks and narrow bridges.

**When in doubt, yield to bicyclists!**

## Pedestrians

Even though you are walking, not driving, you are still subject to traffic laws. You have the same responsibility to obey traffic laws as do motorists.



Motorists should yield to you in marked crosswalks, but do not bet your life on it! Watch out for yourself. If you cross the street anywhere but at a crosswalk, you must yield to motorized traffic.

Jaywalking and dashing across intersections could be the end of you. Of every five people killed in a traffic accident, one is a pedestrian.

If you must walk where there is no sidewalk, walk on the left side of the street facing the oncoming traffic. At night wear light colored clothes so you can be seen easily.

## Driver Responsibilities

As a driver you must yield to pedestrians at all times. Even if they are jaywalking or crossing where they should not be, you must stop for them!

School and residential areas are very dangerous. Watch out for children running out from between cars. It is a good idea to drive slower than the speed limit in these areas so you can stop quickly.

## Mopeds (Motorized Bicycles)



Mopeds are a cross between a motorcycle and a bicycle. They are small, lightweight, and cannot go very fast.

Iowa law says a moped (motorized bicycle) is a “motor vehicle that has a saddle or seat for the use of the rider and is designed to travel on not

more than three wheels in contact with the ground and not capable of operating at a speed in excess of thirty miles per hour on level ground unassisted by human power.”

Some mopeds are bigger and faster than this. They are illegal in Iowa. Make sure you know your moped's size and top speed before you buy it. It may be illegal in Iowa.

Your moped must be registered each year. This is done through your county treasurer and costs \$7. To drive one you need a valid license.

An instruction permit does not license you to drive a moped. If you are between 14 and 16 years old, you can get a moped license. You can get this by taking a moped education course and passing a written test, if you do not have a valid permit already, and vision screening. If you are 16 years old or older and do not have an operator's license, you can get a moped license by taking the written test and vision screening.

When riding your moped you must obey all Iowa traffic laws. Be very careful when you ride because your top speed is fairly slow. You could become a traffic hazard when riding in faster moving traffic.

It is against the law for you to carry a passenger. You must also ride your moped with the headlight on day and night.

You must sit astride the moped on the permanently attached seat. You should not ride more than two abreast on the highway. Mopeds cannot be operated between two lanes of traffic. Do not carry packages or bundles that keep you from having both hands on the handlebars.

You must display a flag that is 30 square inches and is five feet from the ground when riding on the streets. This is a law to help you be more visible to other users of the road.

## Driver Responsibilities

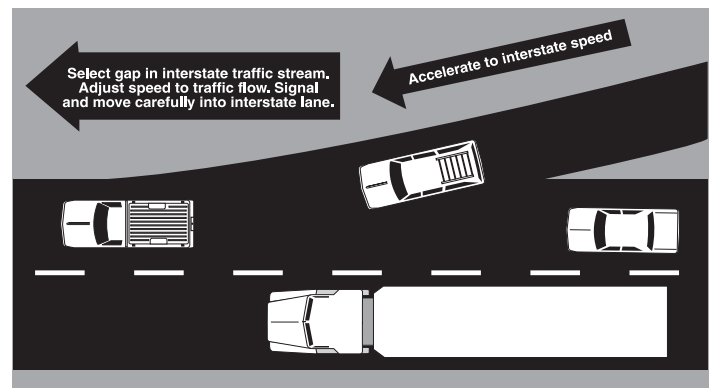
Because motorcycles, mopeds and bicycles have narrower tires, they can get caught in cracks easier. Railroad tracks, steel bridge expansion joints, sewer grates, metal grating on bridges and other metal surfaces are dangerous for cyclists. Give riders plenty of room to move around when approaching these road structures.

## Interstate Driving

Multi-lane highways or freeways with limited access are a way of life. They help you get across the state or across the country. In the larger cities, they even help you get across town. Freeways have fewer accidents per mile than other roads, but the accidents they do have are generally more serious. These accidents are usually caused by drivers failing to yield, or drivers who did not keep a safe distance at the higher speeds.

## Entering Traffic

When you merge with traffic, be sure to signal well in advance and try to enter at the same speed that traffic is moving. Do not try to merge into a gap that is too small. A small gap can quickly become even smaller. Enter a gap that gives you a big enough space cushion to be safe. High-speed roadways generally have ramps to give you time to build up your speed. Use the ramp to reach the speed of other vehicles before you pull onto the road. Do not drive to the end of the ramp and stop. This will not leave you enough room to get up to the speed of traffic. Watch for vehicles coming up behind you; they may not realize you are going slower. Also, drivers behind you will not expect you to stop. If you are watching the traffic on the main road, you may be hit from the rear. If you have to wait for space to enter a roadway, slow down on the ramp so you have some room to speed up before you have to merge. Be prepared for vehicles in front of you on the ramp to slow down.





## Which Lane is Best

It is best to drive on the right and pass on the left. On three-lane freeways, use the right lane for slower speeds, the center lane for normal speeds and the left lane for passing. If you stay in the right lane, watch out for vehicles entering the highway from the acceleration lanes. Adjust your speed when necessary to help them blend into traffic.

## Leaving Traffic

Keep up with the speed of traffic as long as you are on the main road. If the road you are traveling has exit ramps, do not slow down too much until you move onto the exit ramp. When you turn from a high speed, two-lane roadway, try not to slow down too early if you have traffic following you. Tap your brakes and reduce your speed quickly but safely. Thinking ahead is the key to leaving a freeway or interstate. If you miss your turnoff, do not stop and back up; keep going until you get to the next exit.

## Driving Safely in Traffic

### Keep Pace With Traffic

If you are going faster than other traffic, you will have to continue passing others. Each time you pass someone, there is a chance for a collision. The vehicle you are passing may change lanes suddenly, or on a two-lane road, an oncoming car may appear suddenly. Slow down, and keep pace with other traffic. Speeding does not save more than a few minutes an hour.

Going much slower than other vehicles can be just as bad as speeding. It tends to make vehicles bunch up behind you and causes the other traffic to pass you. Pull over and let them pass when safe to do so.

### Slow-Moving Traffic

Some vehicles cannot travel very fast, or have trouble keeping up with the speed of traffic. If you spot these vehicles early, you have time to change lanes or slow down safely. Slowing suddenly can cause an accident. Always be ready to change your speed to the speed of traffic.

- Watch for large trucks and small, underpowered cars on steep grades or when they are entering traffic. They can lose speed on long or steep hills, and it takes longer for these vehicles to get up to speed when they enter traffic.
- Farm tractors, animal-drawn vehicles and roadway maintenance vehicles usually go 35 mph or less. These vehicles may have a slow-moving vehicle sign (an orange triangle) on the back.

## Trouble Spots

Wherever people or traffic gather, your room to maneuver is limited. You need to lower your speed to have time to react in a crowded space. Here are some of the places/times where you may need to slow down:

- shopping centers, parking lots and downtown areas. These are busy areas with vehicles and people stopping, starting and moving in different directions.
- during rush hours. Rush hours often have heavy traffic and drivers that always seem to be in a hurry.
- narrow bridges and tunnels. Vehicles approaching each other are closer together.
- toll plazas. Vehicles are changing lanes and preparing to stop and then speeding up again leaving the plaza. The number of lanes could change both before and after the plaza.
- schools, playgrounds and residential streets. These areas often have children present. Always be alert for them crossing the street, or running or riding bicycles into the street without looking.

## Following Another Vehicle

Many accidents are caused by following the vehicle ahead too closely. You must be able to stop before hitting anything in front of you. Higher speeds require greater stopping distances. Keep this in mind when following another vehicle. The safest and easiest way to judge a safe following distance is to use the "Two-Second Rule."

This will keep the vehicles in front of you far enough ahead that you will be able to stop within the assured clear distance ahead. The "Two-Second Rule" gives you about 1-1/2 car lengths between you and the car ahead of you for every 10 mph of speed you are traveling. If weather or road conditions are not ideal, use three seconds or more to be safe.



## Follow These Steps for a “Two-Second Rule”

### Spacing

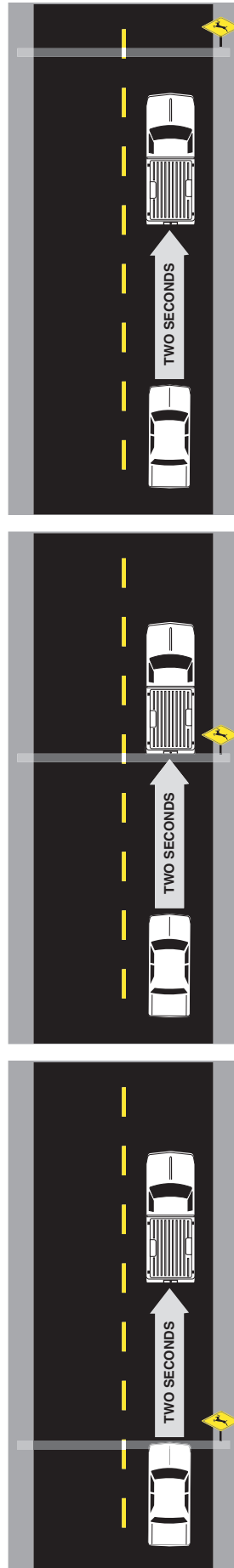
1. The car ahead of you is about to pass a highway sign, utility pole, or some other spot you can keep your eye on.

2. As the back of that car passes the spot you have selected, start counting off seconds. (A good way is to count one, one-thousand; two, two-thousand; three, three-thousand; etc.)

3. Stop counting as soon as the front of your car reaches the selected spot. If it takes less than two seconds, increase the distance between your car and the one in front of you. If it takes two seconds or more, you have a safe following distance. You also can use the “Two-Second Rule” at night to make sure you are not “over-driving your headlights.”

Outside a business or residential district, trucks or towing vehicles must keep at least 300 feet apart.

Stay at least 500 feet behind any emergency vehicle responding to alarm.



## Tailgating

Tailgaters can be real headaches. If your rearview mirror shows another vehicle is too close to you, you should realize you are dealing with an unsafe driver. Be sure you still maintain the proper distance from the vehicle ahead of you.

If you are being tailgated, move slightly to the right and give the tailgater a better view of what is ahead and signal early for turns, stops or lane changes. Try slowing down and encouraging the driver behind you to pass. If all else fails, pull out of the traffic flow. **IF YOU STOP, BE SURE TO KEEP ALL YOUR WINDOWS CLOSED AND THE DOORS LOCKED.**

## Economizing

How you drive has a definite effect on the amount of fuel your car burns. If you reduce gasoline consumption, you save money and conserve energy. You can increase your gas savings by as much as 44 percent simply by driving at a steady pace. Fast accelerations pour more fuel into the engine, but the fuel is not completely burned so gas mileage goes down. Just increasing your speed from 50 to 70 mph increases fuel consumption by 30 percent!

To make additional cuts on your fuel consumption:

- **Don't let your car idle unnecessarily.** Idling more than one minute uses more gas than it takes to restart the engine.
- **Don't warm up your car for long periods.** Your engine will warm up faster by accelerating gently as soon as the oil pressure is up.
- **Don't rev up your motor before shutting off your engine.** That only dumps gasoline into the cylinder walls and washes away the protective oil film.
- **Don't use your air conditioner as much.** You lose about 9 percent fuel efficiency with it running and up to 20 percent during stop-and-go driving.
- **Don't carry unnecessary weight in your car.** An extra 100 pounds can decrease your fuel economy by more than 1 to 2 percent.

## Roundabouts

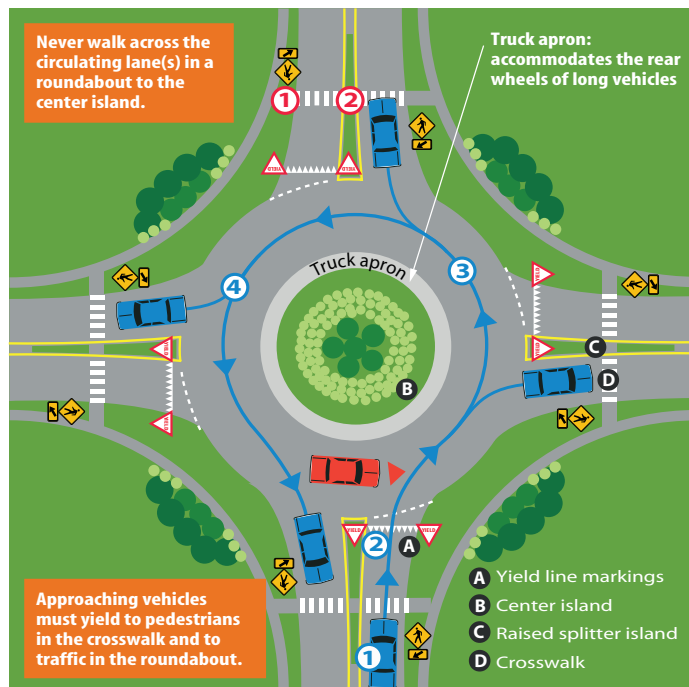


Roundabouts are intersections that direct traffic in a counterclockwise direction around a center island. They have no stop signs or traffic signals. Yield signs, directional signs and pavement markings guide traffic through the intersection. Traffic generally continues to move, but at a slower speed that reduces traffic backup encountered at traditional intersections controlled by stop signs or traffic signal lights.

**Roundabout ahead sign with advisory speed**

Roundabouts are generally safer than other intersections because they tend to reduce head-on, right angle and left-turning traffic crashes. They encourage slower speeds and eliminate left turns across traffic. Roundabouts can improve pedestrian safety by offering a short crossing of one-way traffic moving at slow speeds.

### Single-lane Roundabout



*This diagram is an example only and does not represent all roundabout designs.*

### Motorists (see diagram above)

- ① **Approach:** Slow down to the posted advisory speed. Yield to pedestrians in the crosswalk. They have the right-of-way.
- ② **Enter:** As you approach the yield line markings (shark's teeth), yield to vehicles in the roundabout. Wait for a gap in traffic, then merge into traffic in the roundabout in a counterclockwise direction.
- ③ **Proceed:** Continue through the roundabout until you reach your street. Avoid stopping in the roundabout.
- ④ **Exit:** Signal, then exit the roundabout to your right. Yield to pedestrians in the crosswalk.



### Pedestrians (see diagram below left)

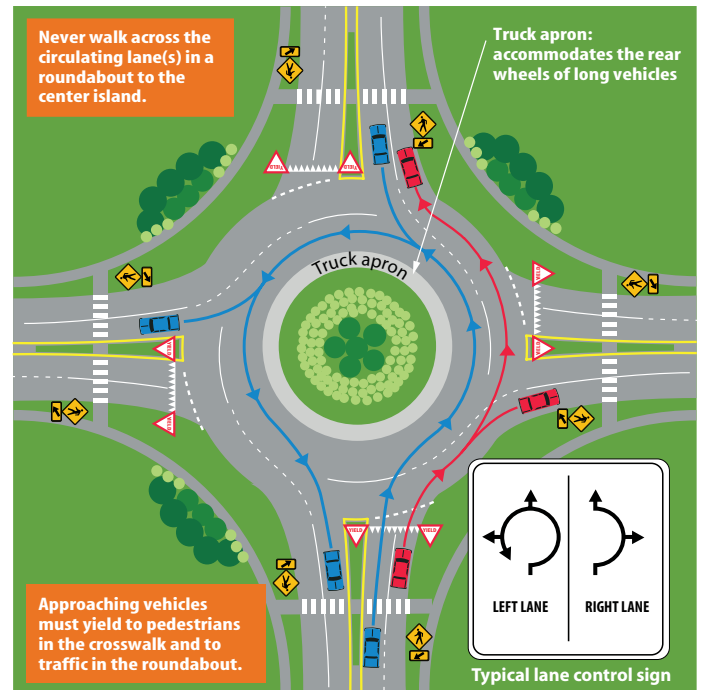
- ① **Approach:** At the pedestrian crosswalk, look **left**.
- ② **Cross:** Cross to the raised splitter island. Look **right**. Finish crossing to the opposite sidewalk.

### Cyclists

Generally, cyclists should walk their bicycles across the pedestrian crosswalk using the same rules as pedestrians.

Experienced cyclists may navigate roundabouts like motorists. Do not hug the curb. Bicyclists using the roundabout should follow the same rules as motorists. Ride in the middle of the lane to prevent vehicles from passing. Yield to pedestrians in crosswalks.

### Multi-lane Roundabout



*This diagram is an example only and does not represent all roundabout designs.*

### Do

- As you approach the roundabout, and in advance of the yield line, select the appropriate lane according to the lane control signs and pavement markings.
- When entering the roundabout, yield to all traffic already in the roundabout.
- After passing the street before your exit, signal for a right turn, then exit.
- Be aware of traffic in the other lane.

### Don't

- Do not change lanes in the roundabout.
- Do not pass or drive beside trucks or buses. They may straddle lanes or may not see you.
- Do not drive in the outside lane farther than allowed. This decreases the efficiency of the roundabout and creates a hazard to vehicles legally exiting from the inside lane.

## Review Questions (Section 5)

T/F

- \_\_\_\_\_ 1. You must always stop at all red lights, including where right turns on red are allowed. **True/False**
- \_\_\_\_\_ 2. If the speed limit is less than 45 miles per hour, you must begin using your turn signals at least 100 feet before the turn. **True/False**
- \_\_\_\_\_ 3. When you are making a left turn on a two-way road, you should check to the rear, signal, then move into the lane closest to the center line and start turning as the front bumper crosses the sidewalk. **True/False**
- \_\_\_\_\_ 4. You should move to within one foot of the right curb when making a right turn. **True/False**
- \_\_\_\_\_ 5. The posted speed limit is the fastest speed you can drive under all conditions. **True/False**
- \_\_\_\_\_ 6. The speed limit in a residential area of town is 25 miles per hour. **True/False**
- \_\_\_\_\_ 7. The speed limit in a business district is 25 miles per hour. **True/False**
- \_\_\_\_\_ 8. The speed limit in a school zone is 25 miles per hour. **True/False**
- \_\_\_\_\_ 9. Wet ice at the freezing point (32° F) is twice as slippery as hard frozen ice. **True/False**
- \_\_\_\_\_ 10. When traveling on snow and ice, you should use your accelerator and brakes gently. **True/False**
- \_\_\_\_\_ 11. Good judgment and a clear road ahead are necessary to pass another vehicle. **True/False**
- \_\_\_\_\_ 12. You may pass if the solid yellow line is on your side of the centerline. **True/False**
- \_\_\_\_\_ 13. Do not pass if you must go off the pavement or onto the shoulder of the road. **True/False**
- \_\_\_\_\_ 14. You should check the blind spot and look over your shoulder before changing lanes. **True/False**
- \_\_\_\_\_ 15. When changing lanes, you should constantly check traffic so you will see anyone coming up on you unexpectedly. **True/False**
- \_\_\_\_\_ 16. If you are driving at night within 400 feet of the car ahead of you, or 1,000 feet from an oncoming car, you must use low beams. **True/False**
- \_\_\_\_\_ 17. If you are stalled on the roadway, have your passengers get out of the vehicle and stand off the roadway. **True/False**
- \_\_\_\_\_ 18. On three-lane freeways, use the right lane for faster speeds. **True/False**
- \_\_\_\_\_ 19. The "two-second rule" allows you about three car lengths behind the vehicle ahead for every 10 miles per hour you are traveling. **True/False**
- \_\_\_\_\_ 20. Moving slightly to the right and signaling early are two ways of getting a tailgater's attention. **True/False**

Answers on page 72

